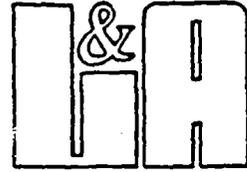


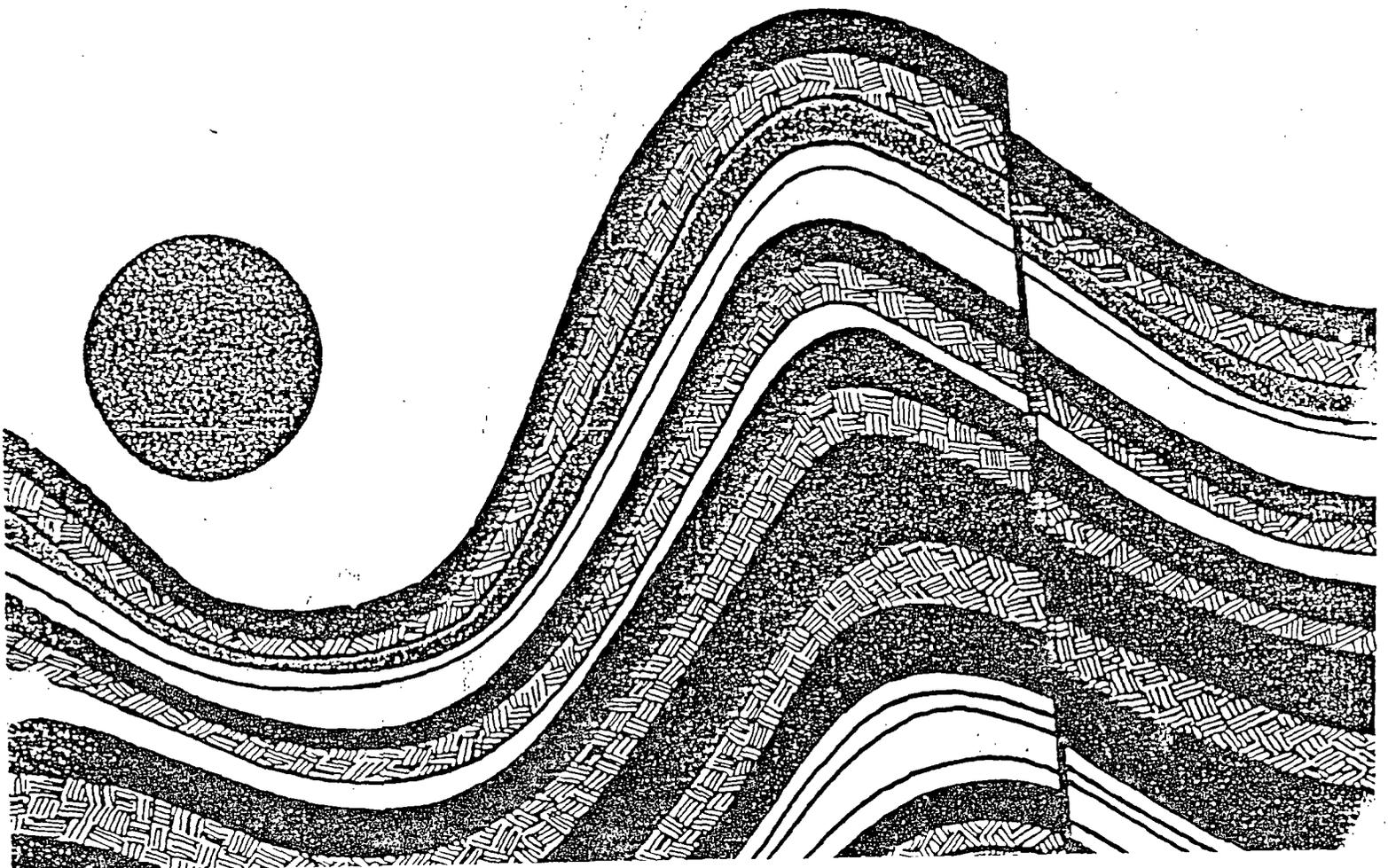
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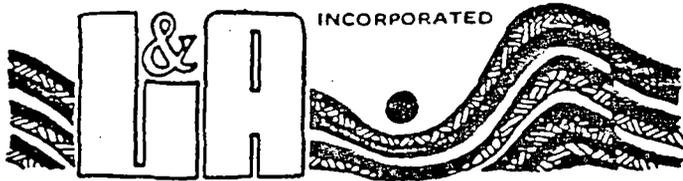
# Leighton and Associates



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LEIGHTON and ASSOCIATES



•SOIL ENGINEERING •GEOLOGY •GEOPHYSICS •GROUND WATER •MATERIALS TESTING •HAZARDOUS WASTE ASSESSMENT

August 26, 1987

Project No. 40870825-02

TO: Darling, Wold and Agee  
P. O. Box 348  
Whittier, California 90608

ATTENTION: Messrs. Paul E. Hendricks and Wayne L. Harvey  
Trustees

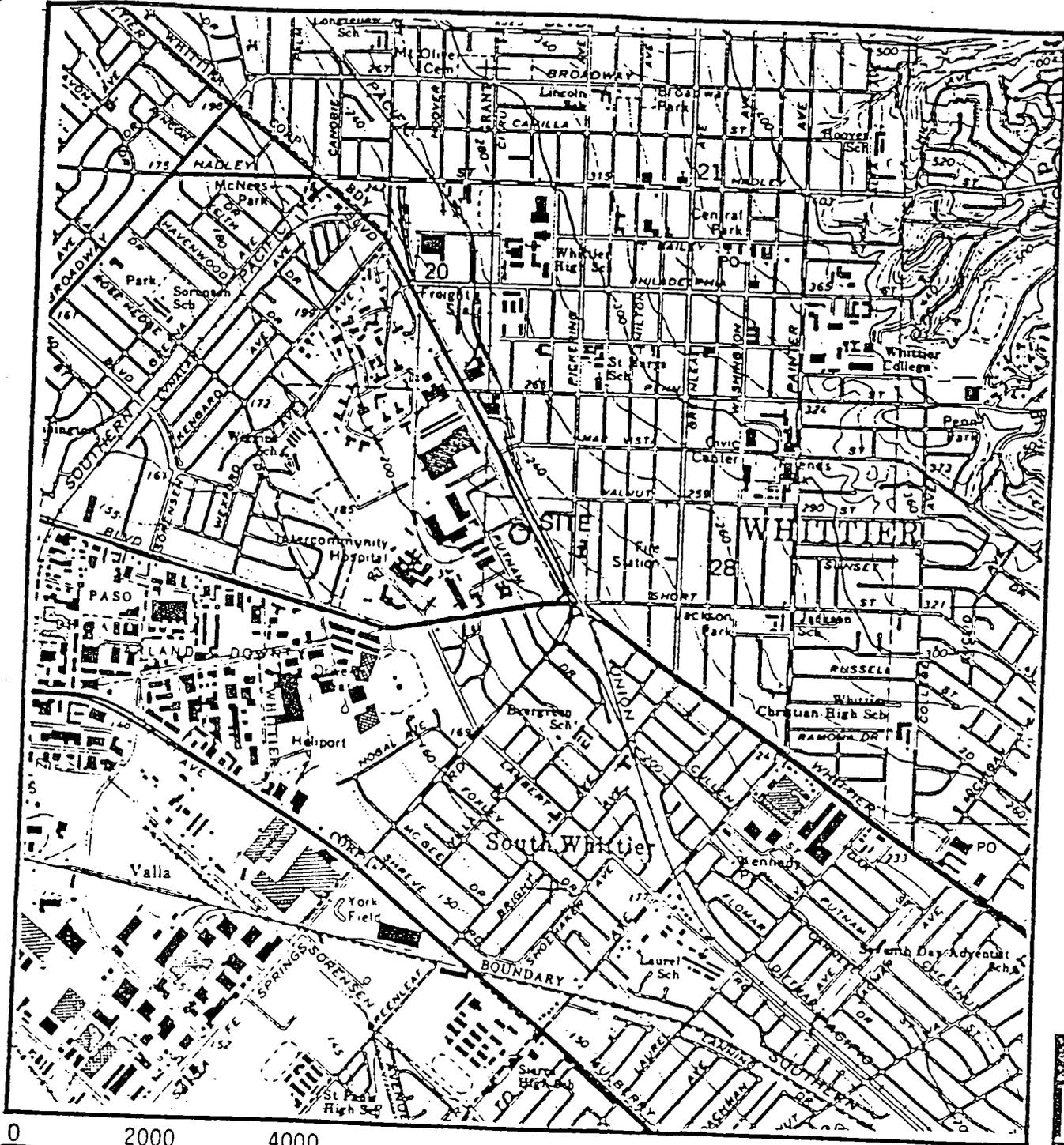
SUBJECT: Results of Laboratory Analysis Performed on Soil Samples Collected  
After the Removal of an Underground Tank, Located on the Fred R.  
Rippy Trust Property, 12512 East Whittier Boulevard, Whittier,  
California

### Introduction

In accordance with your request, Leighton and Associates, Inc. has conducted soil sampling beneath one removed underground storage tank at the subject site. The purpose of this investigation was to collect and analyze soil samples from beneath the underground tank, as required by the County of Los Angeles Department of Public Works (LADPW). This report presents the results of our investigation.

### Accompanying Map, Illustration, and Appendices

Index Map (2000-scale) - Page 2  
Figure 1 - Site Map  
Appendix A - Soil Sampling and Procedures  
Appendix B - Laboratory Results and Chain-of-Custody Records



0 2000 4000  
 scale feet



INDEX MAP  
 OF  
 RIPPY TRUST  
 (OMEGA RECOVERY SYSTEMS)  
 12504 East Whittier Boulevard  
 (Subject Site Shown in Yellow)

BASE MAP: USGS Whittier 7-1/2 Minute  
 Quadrangle

Scope of Work

The following scope of work was proposed and implemented:

- Observe and record tank removal activities.
- Collect and visually describe soil types beneath the one removed underground storage tank (unknown contents).
- Laboratory analysis by a Department of Health Services certified laboratory.
- Preparation of a letter report containing results of laboratory analysis and summary of findings.

Field Investigation

On August 8, 1987, one 500-gallon underground tank was unearthed and removed from the subject site. The bottom depth of the tank was approximately eight feet below grade. No representative from the LADPW was present when the tank was removed. Inspectors from the Los Angeles County Fire Department did observe the tank removal process. A Leighton and Associates, Inc. geologist visually observed the excavation. A strong solvent odor was noticed by personnel onsite. The Photoionization detector (a device used to measure the presence of volatile organic compounds) detected no measurable volatile organic vapors during the tank removal operations.

During removal of the concrete pad and tank overburden, the roof of the west end of the tank collapsed, allowing a small amount of soil to spill into the tank. A plywood board was placed over the hole to prevent additional soil from entering and possibly being contaminated by the contents of the tank. Close inspection of the exhumed tank revealed that it was badly corroded in the area where the tank had collapsed.

Upon removal of the tank, approximately 50 gallons of residual liquid was found in the bottom of the tank. A preliminary chemical scan of the residual fluid was performed onsite by a chemist from Omega Recovery Systems (the present tenant). The preliminary test results indicated that the fluid was primarily water with small amounts of various hydrocarbons and solvents.

The excavated soils were separated onsite into two separate stockpiles: one pile represented the soils that were removed from the excavation, and the other pile consisted of the soils that had spilled into the tank.

Two soil samples (E-1 and E-2) were collected at 10 and 12 feet below grade (two and four feet below the base of the tank). Three additional soil samples were collected from the stockpiled soils (see Site Map, Figure 1). Sample SP-1 was taken from soils obtained from inside the tank, and SP-2A and SP-2B were collected from excavated soils. No field detectable signs of contamination (staining or odors) were observed in the soil samples from beneath the tank or in the excavation stockpiled soils. The three stockpile soil samples were collected from a 6-inch depth at three points within the soil pile. All the

soil samples were collected in accordance with EPA Standard Methods, as outlined in Appendix A.

The soils were analyzed by Associated Laboratories, a Department of Health Services' certified laboratory. EPA Test Methods 8010 (purgeable halogenated volatile organics), modified 8015 (purgeable non-halogenated volatile organics), 8020 (aromatic volatile organics), and 8240 (volatile organics) were performed on the two soil samples collected from beneath the tank (E-1 and E-2). Sample SP-1, representing the soil that had spilled into the tank, was analyzed by EPA Test Method 8240. The other samples collected from the excavation soil stockpile were not analyzed (see Appendix B for laboratory results and chain-of-custody records).

### Results

The soils that were encountered within the tank excavation were medium to dark brown, moderately sorted, medium density, silts and sandy silts.

Relatively low to moderate levels of petroleum hydrocarbons and solvent contamination were detected in the soils beneath the subject tank. In nearly all cases, the detected contaminants appear to be increasing in concentration with depth. The results of the petroleum hydrocarbon analyses show the concentration ranging from 11 ppm at 10 feet below grade (BG) to 300 ppm at 12 feet BG. Benzene, Toluene, Ethyl Benzene, and Xylene were not detected at 10 feet BG, but were detected in relatively low concentrations (.3 to .4 ppm Toluene, Ethyl Benzene, Xylenes; Benzene was not detected) at 12 feet BG. The four purgeable organic compounds that were detected by EPA Test Method 8010 also showed increasing concentrations with depth, as did 9 of the 11 compounds detected in the EPA Test Method 8240 scan (see laboratory results in Appendix B).

The small stockpile, constituting the soils that had spilled into the tank while it was being exhumed, contained detectable amounts of Methylene chloride (26 ppb), Acetone (236 ppb), 1,1,2-Trichloroethane (162 ppb), Tetrachloroethylene (410 ppb), and O-Xylene (9 ppb).

### Summary of Findings and Conclusions

Based on the results of our investigation, we present the following findings and conclusions:

1. Laboratory analysis of soils sampled from beneath the tank indicates the presence of petroleum hydrocarbons and solvents in the soils.
2. Of the 13 potentially hazardous compounds that were identified in the soils during this investigation, all but three appear to be increasing in concentration with depth.
3. Due to the similarities in the chemical makeup of both the fluid found in the tank and the contaminants found in the soil, it would appear that the tank may be a contributory source for the contamination. However, since



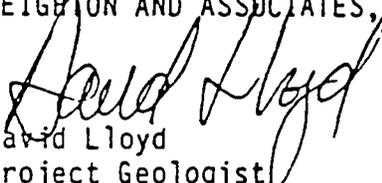
these same chemicals can be found elsewhere on the site, there is insufficient evidence at this time to preclude the possibility of other contamination sources.

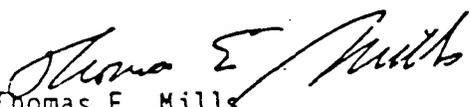
4. The lateral and vertical extent of the soil contamination, and the impact (if any) to local ground water resources are unknown at this time and should be examined.

If you have any questions regarding our report, please do not hesitate to contact Mr. David Lloyd at this office. We appreciate this opportunity to be of service.

Respectfully submitted,

LEIGHTON AND ASSOCIATES, INC.

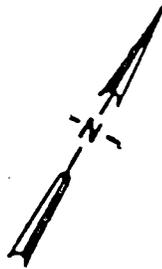
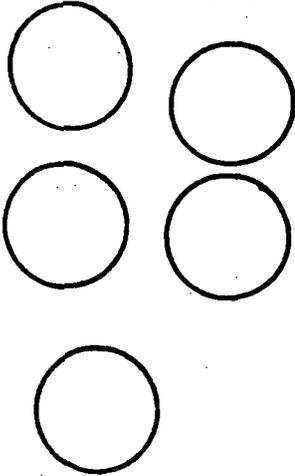
  
David Lloyd  
Project Geologist

  
Thomas E. Mills  
Director, Environmental Services

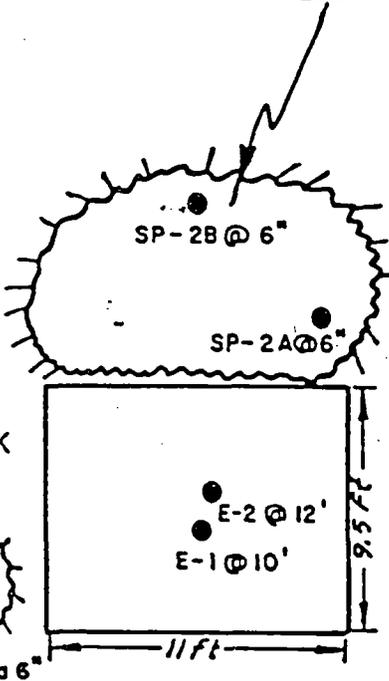
TMD/DL/TM/rsh/lr

Distribution: (3) Addressee

ABOVE GROUND TANK FARM



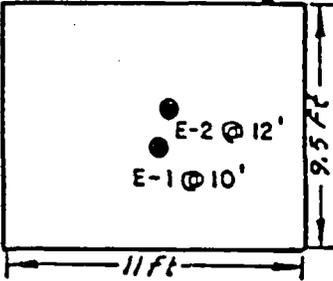
STOCKPILE SOIL FROM TANK EXCAVATION AREA  
"CLEAN"



STOCKPILE FROM INSIDE TANK  
"DIRTY"



SP-1 @ 6"



CHEMICAL STORAGE

OFFICE

CHEMICAL RECYCLE AREA

CHEMICAL DISTILLERY COLUMN

E. WHITTIER FRONTAGE RD.

PARKWAY LAWN

(NOT TO SCALE)

FIGURE 1

RIPPY TRUST

12504 E. WHITTIER BLVD. WHITTIER, CA



Proj: 40870825-02 Scale: None Date: 8/26/87  
Engineer/Geologist: GK Drafting By: nh

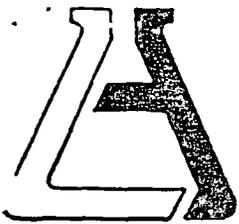
LEIGHTON and ASSOCIATES, INC.

APPENDIX A

SOIL SAMPLING AND PROCEDURES

1. Soils encountered during excavating operations were visually classified by a Leighton and Associates, Inc. geologist.
2. Soils were collected from grab samples from the bucket of a backhoe. Soils were placed in a brass ring (2.5-inch O.D., 3 inches in length).
3. Soil samples were sealed with Teflon tape, PVC caps, and duct tape. Samples were also labeled, placed on ice, and manifested on a Chain-of-Custody record prior to being transported to Associated Laboratories, a California DOHS-certified laboratory in Orange County on May 14, 1987.

APPENDIX B



# ASSOCIATED LABORATORIES

806 North Batavia - Orange, California 92668 - 714/771-6900

## CLIENT

Leighton & Associates  
667 Brea Canyon Road  
Suite 31  
Walnut, CA 91789  
Attn: David Lloyd

(1719)

LAB NO. F36909-2

REPORTED 08/17/87

## SAMPLE

Soil

RECEIVED 08/07/87

## IDENTIFICATION

Project # 40870825-02, Rippiy Trust  
Rippiy Trust, Whittier, CA  
As Submitted

## BASED ON SAMPLE

### Purgeable Organics EPA 8240:

### E-1 @ 10'

### E-2 @ 12'

### SP-1 @ 6'

Methylene chloride	----	1,700 µg/kg	26 µg/kg
Acetone	46 µg/kg	13,800 µg/kg	236 µg/kg
1,1-Dichloroethane	----	156 µg/kg	----
1,1,1-Trichloroethane	----	3,500 µg/kg	----
1,1,2-Trichloroethane	----	166 µg/kg	162 µg/kg
4-Methyl-2-pentanone	6 µg/kg	----	----
Tetrachloroethylene	200 µg/kg	----	410 µg/kg
Tetrachloroethene	----	3,000 µg/kg	----
Toluene	----	295 µg/kg	----
Ethylbenzene	----	176 µg/kg	----
o-Xylene	----	490 µg/kg	9 µg/kg

All other compounds were None Detected. See attached list.

## ASSOCIATED LABORATORIES

  
Edward S. Behare, Ph.D.

ESB/ql

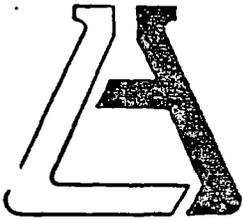
NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

TESTING & CONSULTING

Chemical •

Microbiological •

Environmental •



# ASSOCIATED LABORATORIES

806 North Batavia - Orange, California 92668 - 714/771-6900

## CLIENT

Leighton & Associates  
667 Brea Canyon Road  
Suite 31  
Walnut, CA 91789  
Attn: David Lloyd

(1719) LAB NO: F36909-1  
REPORTED 08/17/87

## SAMPLE

Soil

RECEIVED 08/07/87

## IDENTIFICATION

Project # 40870825-02, Rippiy Trust  
Rippiy Trust, Whittier, CA  
As Submitted

## BASED ON SAMPLE

	<u>E-1 @ 10'</u>	<u>E-2 @ 12'</u>
Total Hydrocarbons (8015) (mg/kg)	11	300
Benzene (mg/kg)	ND< 0.05	ND< 0.05
Toluene (mg/kg)	ND< 0.05	0.4
Ethyl Benzene (mg/kg)	ND< 0.1	0.3
Total Xylene (8020) (mg/kg)	ND< 0.1	0.4
<u>EPA Method 8010</u>	<u>E-1 @ 10'</u>	<u>E-2 @ 12'</u>
1,1,1-Trichloroethane	None Detected	4.0 mg/kg
Tetrachloroethene	0.24 mg/kg	2.7 mg/kg
Methylene chloride	None Detected	1.3 mg/kg
1,1-Dichloroethane	None Detected	0.12 mg/kg

All other compounds were None Detected. See attached list.

## ASSOCIATED LABORATORIES

  
Edward S. Behare, Ph.D.

ESB/ql

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

TESTING & CONSULTING

Chemical •  
Microbiological •  
Environmental •



**ASSOCIATED LABORATORIES**

806 North Batavia - Orange, California 92668 - 714/771-6900

CLIENT

Leighton & Associates  
667 Brea Canyon Road  
Suite 31  
Walnut, CA 91789  
Attn: David Lloyd

(1719)

LAB NO F36909-3

REPORTED 08/17/87

SAMPLE

Soil

RECEIVED 08/07/87

IDENTIFICATION

Project # 40870825-02, Rippiy Trust  
Rippiy Trust, Whittier, CA  
As Submitted

BASED ON SAMPLE

E-1 @ 10'

Total Hydrocarbons (8015)

11 mg/kg

ASSOCIATED LABORATORIES

  
Edward S. Behare, Ph.D.

ESB/ql

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

TESTING & CONSULTING

Chemical •

Microbiological •

Environmental •

Client: Leighton & Associates  
Lab No.: F36909  
Date: August 17, 1987

PURGEABLE ORGANICS  
EPA METHOD 8240:

LIMITS OF DETECTION

Chloromethane	ND< 30.0 µg/kg
Bromomethane	ND< 30.0 µg/kg
Vinyl Chloride	ND< 30.0 µg/kg
Chloroethane	ND< 30.0 µg/kg
Methylene Chloride	ND< 50.0 µg/kg
Acetone	ND< 50.0 µg/kg
Acrolein	ND< 50.0 µg/kg
Acrylonitrile	ND< 50.0 µg/kg
Carbon Disulfide	ND< 5.0 µg/kg
1,1-Dichloroethene	ND< 5.0 µg/kg
1,1-Dichloroethane	ND< 5.0 µg/kg
Trans-1,2-Dichloroethene	ND< 5.0 µg/kg
Tetrahydrofuran	ND< 5.0 µg/kg
Trichlorofluoromethane	ND< 5.0 µg/kg
Freon-TF	ND< 5.0 µg/kg
Ethylene Dibromide	ND< 5.0 µg/kg
1,4-Dioxane	ND< 5.0 µg/kg
1,2-Dibromo-3-Chloropropane	ND< 5.0 µg/kg
Chloroform	ND< 5.0 µg/kg
1,2-Dichloroethane	ND< 5.0 µg/kg
2-Butanone	ND< 50.0 µg/kg
1,1,1-Trichloroethane	ND< 5.0 µg/kg
Carbon Tetrachloride	ND< 5.0 µg/kg
Vinyl Acetate	ND< 30.0 µg/kg
Bromodichloromethane	ND< 5.0 µg/kg
1,1,2,2-Tetrachloroethane	ND< 5.0 µg/kg
1,2-Dichloropropane	ND< 5.0 µg/kg
Trans-1,3-Dichloropropene	ND< 5.0 µg/kg
Trichloroethene	ND< 5.0 µg/kg
Chlorodibromomethane	ND< 5.0 µg/kg
1,1,2-Trichloroethane	ND< 5.0 µg/kg
Benzene	ND< 5.0 µg/kg
Cis-1,3-Dichloropropene	ND< 5.0 µg/kg
2-Chloroethylvinyl Ether	ND< 50.0 µg/kg
Bromoform	ND< 5.0 µg/kg
2-Hexanone	ND< 30.0 µg/kg
4-Methyl-2-Pentanone	ND< 30.0 µg/kg
Tetrachloroethene	ND< 5.0 µg/kg
Toluene	ND< 5.0 µg/kg
Chlorobenzene	ND< 5.0 µg/kg
Ethylbenzene	ND< 5.0 µg/kg
Styrene	ND< 5.0 µg/kg
Total Xylenes	ND< 5.0 µg/kg
M-Chlorotoluene	ND< 5.0 µg/kg
1,3-Dichlorobenzene	ND< 5.0 µg/kg
1,4-Dichlorobenzene	ND< 5.0 µg/kg
1,2-Dichlorobenzene	ND< 5.0 µg/kg



Client: Leighton & Associates  
Lab No.: F36909  
Date: August 17, 1987

PURGEABLE ORGANICS - EPA METHOD 8010

Chloromethane	ND <10 µg/kg
Bromomethane	ND <10 µg/kg
Dichlorodifluoromethane	ND <10 µg/kg
Vinyl chloride	ND <10 µg/kg
Chloroethane	ND <10 µg/kg
Methylene chloride	ND <10 µg/kg
Trichlorofluoromethane	ND <10 µg/kg
1,1-Dichloroethene	ND <10 µg/kg
1,1-Dichloroethane	ND <10 µg/kg
trans-1,2-Dichloroethene	ND <10 µg/kg
Chloroform	ND <10 µg/kg
1,2-Dichloroethane	ND <10 µg/kg
1,1,1-Trichloroethane	ND <10 µg/kg
Carbon tetrachloride	ND <10 µg/kg
Bromodichloromethane	ND <10 µg/kg
1,2-Dichloropropane	ND <10 µg/kg
trans-1,3-Dichloropropene	ND <10 µg/kg
Trichloroethene	ND <10 µg/kg
Dibromochloromethane	ND <10 µg/kg
1,1,2-Trichloroethane	ND <10 µg/kg
cis-1,3-Dichloropropene	ND <10 µg/kg
2-Chloroethylvinyl ether	ND <10 µg/kg
Bromoform	ND <10 µg/kg
1,1,2,2-Tetrachloroethane	ND <10 µg/kg
Tetrachloroethene	ND <10 µg/kg
Chlorobenzene	ND <10 µg/kg
1,3-Dichlorobenzene	ND <10 µg/kg
1,2-Dichlorobenzene	ND <10 µg/kg
1,4-Dichlorobenzene	ND <10 µg/kg



